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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/865,570

05/29/2001

Shinobu Ozeki

109663

3660

25944

7590

05/24/2007

OLIFF & BERRIDGE, PLC

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ALEXANDRIA, VA 22320

EXAMINER

POON, KING Y

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/865,570	<b>Applicant(s)</b> OZEKI ET AL.	
	<b>Examiner</b> King Y. Poon	<b>Art Unit</b> 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 12, 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 3/2/2007.

2. Applicant's election with traverse of the restriction requirement in the reply filed on 3/2/2007 is acknowledged. The traversal is on the ground(s) that the search and examining the entire application could be made without serious burden. This is not found persuasive because the species require a different field of search.

For example: the search query for species I requires the term "separation, extraction" –such query is not required for species II and III;

the search query for species II requires the term "wavelength, indication" –such query is not required for species I and III.

the search query for species III requires the term "timing, sampling" –such query is not required for species I and II.

See MPEP 808.2 (C).

The requirement is still deemed proper and is therefore made FINAL.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of "wherein the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit each comprises: a communication request circuit communicatively coupled to the arbitrating parts, and the arbitrating part arbitrates, through the respective communication request circuit, the types of optical signals outputted or received by the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11, 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 11: The limitation of "wherein the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit each comprises: a communication request circuit communicatively coupled to the arbitrating parts, and the arbitrating part arbitrates, through the respective communication request circuit, the types of optical signals outputted or received by the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit" are subject matter which was not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

From fig. 8 and fig. 11, it appears each functional unit has only one communication request circuit. It does not appear that the functional unit has two communication request circuits as claimed—one in the second optical signal output unit and one in the optical signal input unit of the second functional unit.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1: It is unclear the “second optical signal input unit” of lines 13-14 is referring to optical signal input unit of line 11, 14, 19, or a different optical signal input unit.

Claims 2-10, 14 are rejected under 35 U.S.C. 112, second paragraph because they depend on rejected claim 1.

It also appears that the claims are referring to a single unit with different names in the claim; if that is the case, the claim is rejected under 112 second as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examining purpose, the units under different names are being treated as two different entities. For example, the second optical signal output unit and the optical signal input unit are being considered as two different units.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 6, 8, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al (US 5,872,869) and Shang (US 5,077,817).

Regarding claims 1: Shimizu et al. teach a multifunction system/device comprising: an image output unit (the first system/image processing apparatus of column 3, lines 47-53, fig. 1) that has an image signal input unit capable of receiving an optical signal (70, fig. 2), and outputs an image according to an optical signal inputted from the image signal input unit (column 6, lines 38-45, the signal input unit of the first apparatus that received image signal from other system through optical fiber, and print the received image, column 7, lines 20-33), the image signal input unit being integral with, or directly fixed to, the image output unit (fig. 2); a first functional unit (the second system/image processing apparatus of column 3, lines 47-53, fig. 1) that has a first optical signal output unit (70, fig. 2) capable of outputting an optical signal and outputs the optical signal according to a first function through the first optical signal output unit

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(column 7, lines 10-20), the first optical signal output unit being integral with, or directly fixed to, the first functional unit (fig. 2); a second functional unit (the third system/image processing apparatus of column 3, lines 47-53, fig. 1) that has a second optical signal output unit (70, fig. 2, and the software of controller that controls the outputting of optical signal to other systems column 7, lines 10-20) capable of outputting an optical signal and an optical signal input unit (70, fig. 2, and the software of controller that controls the inputting of optical signal to other systems column 7, lines 22-34) capable of receiving an optical signal, and outputs an optical signal according to a second function through the second optical signal output unit, and receives an optical signal inputted through the second optical signal input unit, the second optical signal output unit and the optical signal input unit both being integral with, or directly fixed to, the second functional unit (fig. 2); and a distribution-type optical signal transmission medium (optical fiber network, column 3, lines 50-53; note) to which the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit are connected and which distributes an optical signal outputted from at least the first optical signal output unit to the image signal input unit and the optical signal input unit, and transmits an optical signal outputted from the second optical signal output unit to the image signal input unit (column 3, lines 45-55, column 7, lines 10-35).

Note: Shimizu does not use the phrase "distribution type optical signal transmission medium" to describe his optical fiber network.

Shang disclosed that optical fiber network (column 1, lines 10-20) is inherently a "distribution (column 1, line 14, column 1, lines 35-36) type optical signal transmission



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(column 2, line 53) medium (allow light to go through, column 2, lines 35-40)" or at least it is well known in the art.

Therefore, it would have been obvious to a person with ordinary skill in the art to use the conventional optical fiber network for the system of Shimizu such that Shimizu's system would be properly functioned.

Regarding claim 2, Shimizu et al, teach the multifunction system/device according to claim 1, wherein the first optical signal output unit and the second optical signal output unit include a unit that generates plural optical signals of different types, and the image signal input unit and the optical signal input unit include an extraction part that extracts an optical signal of a specific type from inputted optical signals (column 6, lines 38-45, the systems transmit and receive/extract both optical control signals and optical image signals using optical fibers 701, 702, 703 & 704).

Regarding claim 6, Shimizu et al, teach the multifunction system/device according to claim 2, further comprising: an arbitrating part that arbitrates the respective communications of the image output unit, the first functional unit, and the second functional unit by specifying the types of optical signals to be outputted by the first optical signal output unit and the second optical signal output unit, and the types of optical signals to be extracted by the image signal input unit and the optical signal input unit (column 6, lines 38-45, Shimizu teaches system receives/extracts and transmits control signals and image signals to other image processing apparatus using optical fibers 701, 702, 703 & 704. The type of optical signals are at least control signal and image signals. Column 5:lines 10-39, teaches the CPU 10 and DMA controller

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controlling other circuit block and the CPU 10 (arbitrates) is in control of the signal lines such as 136, 134, 135 of column 6, lines 30-40. Signal line 136 is used for communication of control signals (column 5, lines 34-40), signal lines 134 is for supplying control signal and image signal to interface 70 (column 6, lines 33-38) and signal line 135 is for receiving control signal and image signal from interface 70).

Regarding claim 8: Shimizu teaches wherein the image output unit comprises a printer (column 3, lines 49-50), the first functional unit comprises an image reading device (column 3, lines 49-50), and the second functional unit comprises at least a storage part (20, 90, fig. 2) that stores a signal inputted from the optical signal input unit, wherein the first functional unit outputs an optical signal in accordance with an image to be printed (column 7, lines 10-35), the second functional unit stores in the storage part a signal according to the optical signal inputted through the optical signal input unit (column 8, lines 40-45, fig. 2), and outputs the optical signal in accordance with the image through the second optical signal output unit (column 7, lines 10-20); and the image output unit prints the image according to the optical signal inputted from the second functional unit through the image signal input unit (column 7, lines 10-35).

Regarding claim 9, Shimizu et al., teach the multifunction system/device according to claim 1, further comprising: a third functional unit (the fourth system of column 3, lines 47-53) having a third optical signal output unit, the third optical signal output unit outputting an optical signal according to a third function to the distribution-type optical signal transmission medium, wherein the first functional unit outputs an optical signal to the image output unit through the first optical signal output unit, and the

third functional unit transmits an optical signal to the second functional unit through the third optical signal output unit (figure 1 & column 3 lines 22-53, optical signal transmission medium is accomplished through optical fiber cables that network other similar systems)

Regarding claim 10: Shang teaches wherein the distribution type optical signal transmission medium has a plurality of input ports and a plurality of output ports and an input from one of the plurality of the input ports is transmitted to the plurality of output ports (column 1, lines 14-20).

10. Claim 4, 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US 5,872,869) and Shang as applied to claims 1, 2 above and further in view of Hirota et al. (US 5,822,475).

Regarding claim 4, Shimizu et al., teach the multifunction system/device according to claim 2, using optical fibers communications (column 6, lines 40-45) but do not teach wherein the plural optical signals of different types are optical signals with different wavelengths; in fact, Shimizu does not disclosed any detail of his optical fibers communications, and no person would be able to made use of his invention without the help of other references that teaches optical fibers communications.

Since Shimizu does not teach any communication technique or what fabric optic communication is, a person with ordinary skill in the art that has no idea what optical communication is must rely on other references in order to make use of Shimizu.

Hirota et al., in the same area of optical communications teach signals of different wavelengths that are transmitted in the optical transmission system (column 3,

lines 57-61, transmitting and receiving a plurality of optical signals is accomplished by discriminating them by the wavelength of each signal beam).

Also see column 2, lines 35-40 of Shang.

Accordingly, it would have been obvious to one skilled in the art to have used the wavelength discrimination transmission system/device of Hirota et al. and Shang, in the multifunction system of Shimizu et al, because it would have allowed a user to make use of Shimizu's optical communication system, and it would also have provide an optical bus which has high resistance to environmental changes, as suggested by Hirota, column 2, lines 40-50.

Regarding claim 5, Shimizu et al, teach the multifunction system/device according to claim 2, but do not teach wherein the plural optical signals of different types are optical signals with different timings of output to the distribution-type optical signal transmission medium.

However, Horita et al., teach a optical transmission system that assigns timing for input and output of optical signals (column 7:line 67-column 8, line 8, timing is used for transmission and receiving each signal).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the output timing taught by Horita et al., with the multifunction system of Shimizu et al., because it allows greater control of optical signal transmission in the system.

Regarding claim 7, Shimizu et al., teach the multifunction system/devcie according to claim 1, but do not teach the system wherein the distribution-type optical transmission medium comprises a diffusion pad that diffuses an inputted optical signal.

However, Hirota et al., teaches an optical transmission medium comprising a diffusion part (column 6:lines 8-24, diffusion occurs within optical transmission layer 21).

Accordingly, it would have been obvious to one skilled in the ad at the time of the invention to have used the diffusion/distribution part taught by Hirota et al., with the multifunction system of Shimizu et al., because (column 3, lines 1-12, Hirota et al.) the optical diffusion portions or optical diffusers diffuse and propagate input signal beams, allowing a signal beam input from a certain signal beam input/output portion to transmit to any other signal beam input/output portion without fail even when there are temperature variations. Also, the number of circuit boards optically connected to the optical bus in the signal beam input/output portions can be changed to a value equal to or less than the maximum number of the signal beam input/output portions, thereby making it possible to construct a system which is resistant to environmental changes and extensible.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu (US 5,872,869) and Shang as applied to claim 2 and further in view of and Atlas (US 6,295,148).

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Regarding claim 3, Shimizu et al. teach the multifunction system/device according to claim 2, but do not teach wherein the plural optical signals of different types are optical signals with different intensity levels.

However, Atlas teaches an optical network for transmitting signals based on intensity levels (column 8, lines 9-12).

Accordingly, it would have been obvious to one skilled in the art to have used the intensity level discrimination transmission system of Atlas in the multifunction system of Shimizu et al., because it allows greater control of signal transmission.

### ***Response to Arguments***

12. Applicant's arguments filed 11/1/2006 have been fully considered but they are not persuasive.

With respect to applicant's argument that "because the optical fiber interface 70 is within and integral with only the image information generating unit 1, Shimizu fails to disclose the claimed image signal input unit, first optical signal output unit, second optical signal output unit, and optical signal input unit; has been considered.

In reply: Shimizu et al. teach a multifunction system/device comprising: an image output unit (the first system/image processing apparatus of column 3, lines 47-53, fig. 1) that has an image signal input unit capable of receiving an optical signal (70, fig. 2), and outputs an image according to an optical signal inputted from the image signal input unit

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(column 6, lines 38-45, the signal input unit of the first apparatus that received image signal from other system through optical fiber, and print the received image, column 7, lines 20-33), the image signal input unit being integral with, or directly fixed to, the image output unit (fig. 2); a first functional unit (the second system/image processing apparatus of column 3, lines 47-53, fig. 1) that has a first optical signal output unit (70, fig. 2) capable of outputting an optical signal and outputs the optical signal according to a first function through the first optical signal output unit (column 7, lines 10-20), the first optical signal output unit being integral with, or directly fixed to, the first functional unit (fig. 2); a second functional unit (the third system/image processing apparatus of column 3, lines 47-53, fig. 1) that has a second optical signal output unit (70, fig. 2, and the software of controller that controls the outputting of optical signal to other systems column 7, lines 10-20) capable of outputting an optical signal and an optical signal input unit (70, fig. 2, and the software of controller that controls the inputting of optical signal to other systems column 7, lines 22-34) capable of receiving an optical signal, and outputs an optical signal according to a second function through the second optical signal output unit, and receives an optical signal inputted through the second optical signal input unit, the second optical signal output unit and the optical signal input unit both being integral with, or directly fixed to, the second functional unit (fig. 2); and a distribution-type optical signal transmission medium (optical fiber network, column 3, lines 50-53; note) to which the image signal input unit, the first optical signal output unit, the second optical signal output unit, and the optical signal input unit are connected and which distributes an optical signal outputted from at least the first optical signal output

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unit to the image signal input unit and the optical signal input unit, and transmits an optical signal outputted from the second optical signal output unit to the image signal input unit (column 3, lines 45-55, column 7, lines 10-35).

With respect to applicant's argument that because Shimizu does not disclose multiple propagation layers, the combination of Shimizu and Hirota is improper; has been considered.

In reply: Shimizu et al., teach the multifunction system/device according to claim 2, using optical fibers communications (column 6, lines 40-45) but do not teach wherein the plural optical signals of different types are optical signals with different wavelengths; in fact, Shimizu does not disclosed any detail of his optical fibers communications, and no person would be able to made use of his invention without the help of other references that teaches optical fibers communications.

Since Shimizu does not teach any communication technique or what fabric optic communication is, a person with ordinary skill in the art that has no idea what optical communication is must rely on other references in order to make use of Shimizu.

Hirota et al., in the same area of optical communications teach signals of different wavelengths that are transmitted in the optical transmission system (column 3, lines 57-61, transmitting and receiving a plurality of optical signals is accomplished by discriminating them by the wavelength of each signal beam).

Also see column 2, lines 35-40 of Shang.

Accordingly, it would have been obvious to one skilled in the art to have used the wavelength discrimination transmission system/device of Hirota et al. and Shang, in the



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multifunction system of Shimizu et al, because it would have allowed a user to made use of Shimizu's optical communication system, and it would also have provide an optical bus which has high resistance to environmental changes, as suggested by Hirota, column 2, lines 40-50.

With respect to applicant's argument that Shimizu fails to disclose an arbitrating part that arbitrates the respective communications of the image output unit, the first functional unit, and the second functional unit by specifying the types of optical signals to be outputted by the first optical signal output unit and the second optical signal output unit, and the types of optical signals to be extracted by the image signal input unit and the optical signal input unit.

In reply: column 6, lines 38-45, Shimizu teaches system receives/extracts and transmits control signals and image signals to other image processing apparatus using optical fibers 701, 702, 703 & 704. The type of optical signals are at least control signal and image signals. Column 5:lines 10-39, teaches the CPU 10 and DMA controller controlling other circuit block and the CPU 10 (arbitrates) is in control of the signal lines such as 136, 134, 135 of column 6, lines 30-40. Signal line 136 is used for communication of control signals (column 5, lines 34-40), signal lines 134 is for supplying control signal and image signal to interface 70 (column 6, lines 33-38) and signal line 135 is for receiving control signal and image signal from interface 70.

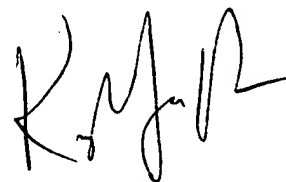
***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is 571-272-7440. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 20, 2007

A handwritten signature in black ink, appearing to read 'K. Y. Poon', with a stylized, flowing script.

KING Y. POON  
PRIMARY EXAMINER